

REMARKS

Claims 1-27, and 29-30, 32-70, 72-83 are pending in the application. Claims 1, 29, and 30 are currently amended. Claims 28 and 71 have been previously cancelled. Claim 31 is currently cancelled. Claims 84-92 have been previously withdrawn without prejudice.

Claim 1 has been amended to incorporate further limitations that the crosslinker comprises glycerine in an amount ranging from 1 part per hundred to 30 parts per hundred by weight of said the vegetable oil-based polyol. Support for this amendment can be found at lines 17-19 on page 7, lines 1-4 on page 8 of the original Specification, as well as numerous concentrations of glycerine disclosed in the Examples.

Claim 29, as currently amended, recites that the low molecular weight polyol has a molecular weight less than one-half of the molecular weight of the vegetable oil-based polyol, and that the low molecular weight polyol is present at from 1 pph to 10 pph based upon the weight of said vegetable oil-based polyol. Claim 30 has been amended to incorporate further limitations that the low molecular weight polyol comprises glycerin. These amendments find support at, for example, lines 1-4 on page 8 of the original Specification, as well as the original claim 39, which disclosed that varying amounts of low molecular weight polyol, such as glycerine, may be added to the vegetable oil-based polyol.

No new matter has been introduced by the present amendments.

I. Claim Rejections – Obviousness-type Double Patenting

Claims 1-27, 29-70 and 72-83 stand rejected for obviousness-type double patenting over claims 1-12 of United States Patent 6,686,435 (the '435 Patent). Applicant respectfully disagrees with the Examiner's analysis.

A double patenting rejection of the obviousness-type is "analogous to a failure to meet the nonobviousness requirement of 35 U.S.C. 103" except that the patent principally underlying the double patenting rejection is not considered prior art. *In re Braithwaite*, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). Therefore, the analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985). Since the analysis employed in an

obviousness-type double patenting determination parallels the guidelines for a 35 U.S.C. 103(a) rejection, the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 should be employed when making an obvious-type double patenting analysis. MPEP Section 804.

These factual inquiries are summarized as follows:

- (A) Determine the scope and content of a patent claim relative to a claim in the application at issue;
- (B) Determine the differences between the scope and content of the patent claim as determined in (A) and the claim in the application at issue;
- (C) Determine the level of ordinary skill in the pertinent art; and
- (D) Evaluate any objective indicia of nonobviousness.

The conclusion of obviousness-type double patenting should be made in light of these factual determinations. Any obviousness-type double patenting rejection should make clear:

- (A) The differences between the inventions defined by the conflicting claims — a claim in the patent compared to a claim in the application; and
- (B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue is anticipated by, or would have been an obvious variation of the invention defined in a claim in the patent.

Id. The present invention represents a distinctive improvement over the invention claimed in the ‘435 patent and is not obvious over the ‘435 patent for at least the following three reasons:

First, Claim 1 of the instant application, as amended, recites a crosslinker comprising glycerine, which is present in an amount ranging from 1 part per hundred to 30 parts per hundred by weight of the vegetable oil-based polyol. The ‘435 patent never contemplates or claims the use of glycerine as a crosslinker. Even if the invention as claimed in Claims 1-12 of the ‘435 patent does inherently disclose glycerine, no specific amount of the glycerine is taught. Thus, Claim 1 is not merely an obvious variation of the invention claimed in Claims 1-12 of the ‘435 patent.

Second, independent Claim 29, as amended, recites that the low molecular weight polyol has a molecular weight less than one-half of the molecular weight of the vegetable oil-based polyol, and that the low molecular weight polyol is present at from 1 pph to 10 pph based upon the weight of said vegetable oil-based polyol. Even if we take the Examiner's position that the polyol of the '435 patent can perform dual functions, the '435 patent still lacks any teaching or suggestions as to the specific amounts of the low molecular weight polyol to be used as a crosslinker. As evidenced by the numerous examples and figures in the instant application, the amounts of the low molecular weight polyol such as glycerine has a significant effect on the mechanical property of the final product and is not at all obvious to one of skill in the art at the time of Applicant's invention.

In the last Office Action dated March 17, 2008, the Examiner stated that "any residual polyols such as glycerine from the reactions involved in making the patentee's claimed polyols falls within the scope of the instant claims which recite no amounts of the low molecular weight polyols." Page 6, lines 19-21 of the Office Action dated March 17, 2008. Applicant respectfully disagrees with the statement because Claims 1 and 29 as amended clearly recite the amounts of the low molecular weight polyol or glycerine to be used. Indeed, the present application teaches a range of crosslinker concentrations that are economical and beneficial for improving the mechanical property of the composition. Such improvement has not been taught or foreseen by the patentee of the '435 patent.

Last but not the least, Claims 17-19 recite a ratio between the isocyanate moieties in the isocyanate and the hydroxyl moieties in the vegetable oil-based polyol. For instance, Claim 17 recites that ratio between the isocyanate moieties in the isocyanate and the hydroxyl moieties in the vegetable oil-based polyol ranges from 1.02 to 1.15. The '435 patent never discloses or suggests such a limitation.

Thus, because claims 1-12 of the '435 patent are distinguishable from the instant claims, withdrawal of the rejection of obviousness-type double patenting is respectfully requested.

II. Claim Rejections – 35 U.S.C. §102(b)

Claims 1-7, 9-11, 13-16, 20-27, 35-52, 54-60, 63, 67-70, 72-74, 78-81 and 83 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 2,902,388 to Szukiewicz (“Szukiewicz”). Applicant respectfully traverses this rejection and requests withdrawal of same.

Rejected claims 1, 51 and 72, and their dependent claims recite the use of glycerine in a specific amount as a crosslinker. Rejected claims 29, 39 and 52 and their dependent claims recite the use of a low molecular weight polyol in a specific amount as a crosslinker. Although Szukiewicz teaches a hydraulic cement-polyurethane composition containing polyols, there is no mention of a crosslinker comprising a low molecular weight polyol as defined, nor does Szukiewicz disclose the use of glycerine in the amount claimed by the Applicant.

It is well known that the average molecular weight is determined by the relative distribution of polyols of various molecular weight. However, Szukiewicz merely discloses that the molecular weight range of the polyols is from 300-2,300. Lines 25-30, Col. 2. Because Szukiewicz provides no information regarding the molecular weight distribution of the polyols, one of ordinary skill in the art would not be able to ascertain the average molecular weight of the polyols disclosed in Szukiewicz. Thus, it is merely speculative to assume that there exists a fraction of low molecular weight polyols within the greater pool of polyols disclosed in Szukiewicz whose molecular weight is about half of the molecular weight of the vegetable oil-based polyols.

Szukiewicz also fails to teach the use of glycerine as a crosslinker as is recited by present claims 51, 72, and many of the dependent claims. Even if we assume that Szukiewicz inherently teaches a low molecular weight fraction of polyols that can serve as a crosslinker, it is against the plain language of Szukiewicz to state that glycerine is inherently part of such a low molecular weight fraction. The chemical formula of glycerine is C₃H₈(OH)₃, with a molecular weight of about 92. By contrast, Szukiewicz teaches that “polyols having molecular weights below 300 are too brittle” to be used. See lines 26-31,

Col. 2. It is therefore mistaken for the Examiner to maintain that Szukiewicz anticipates those claims reciting glycerine when Szukiewicz teaches away from the use of glycerine.

Finally, even if we assume that the polyols of Szukiewicz do contain glycerine or a fraction of low molecular weight polyols that functions as crosslinker, there is still missing the limitation that the low molecular weight polyol or glycerine is present in the amounts as recited in the instant claims as amended. There is no reference in the Szukiewicz patent that would suggest to one of ordinary skills to use such amounts of the low molecular weight polyols or glycerine. Taken together, because not all limitations of the present claims are described in the Szukiewicz patent, withdrawal of the §102(b) rejection is respectfully requested.

III. Claim Rejections – 35 U.S.C. §103(a)

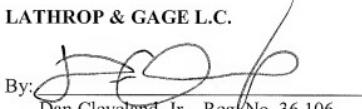
Claims 1-7, 9-11, 13-16, 20-27, 35-60, 63, 67-70, 72-74, and 78-83 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 2,902,388 to Szukiewicz. Applicant respectfully traverses this rejection and requests withdrawal of same.

Under the same factual inquiries as required by Graham as elaborated in Section I, we need to first ascertain the difference between the rejected claims and the invention claimed in the cited art. As explained above in Section II, substantial difference exists between the instant claims and the invention claimed in Szukiewicz. The claim limitations reciting the use of a low molecular weight polyol or glycerine as a crosslinker and the specific amounts of such crosslinkers as recited in the amended claims are not contemplated or disclosed in Szukiewicz. The Examiner has not reasoned why such a difference between Applicant's claimed invention and the cited art would have been obvious to one of skill in the art. Indeed, the Examiner repeatedly stated that the amounts of the crosslinker are not specified in the claims. See e.g., page 6, lines 19-21 of the Office Action dated March 17, 2008, "any residual polyols such as glycerine from the reactions involved in making the patentee's claimed polyols falls within the scope of the instant claims which recite no amounts of the low molecular weight polyols." Applicant respectfully request the Examiner to address this issue in the next Action.

For the foregoing reasons and with the amendments currently presented, Applicant is respectfully seeking a Notice of Allowance in the next Office Communication. Applicants' attorney urges the Examiner to telephone if a conversation could expedite prosecution. The Commissioner is authorized to charge any additional required fees to deposit account 12-0600.

Respectfully submitted,

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